

OTT Times

TRACKING THE ADVANCEMENT OF TRANSPORTATION TECHNOLOGY

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On The Move

Dear Reader:

Working more closely with our customers is the philosophy of the new OTT organization, and it's a philosophy which I think is reflected in every aspect of our service, including this newsletter.

For example, OTT has always been rife with win-win customer success stories, but we didn't always seek to promote these joint efforts. That has changed. Now, if we had a role in helping our customers be more successful in an area which also furthers OTT's energy security and environmental goals, we want everyone to know about it, for the benefit of our customers and OTT alike.

This issue includes details of two such success stories, on two alternative fuels breakthroughs which would not have occurred without OTT innovation and assistance. Our partners are benefiting, and, ultimately, as their efforts and hundreds like them make cleaner, domestically sourced alternative fuels more practical, so will all of America. OTT is proud of its role in our customers' success, and strives to form more win-win partnerships all the time.

Toward that end, we are starting a new feature in this issue. "Customer Q&A" will provide details of an OTT partnership directly from the customer's point of view. We kick off this column with a spotlight on one of our most dramatic and promising programs, an effort which began as one of DOE's first Cooperative Research and Development Agreement (CRADA) partnerships, and,

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OTT creates partnership to convert used cooking oil to clean diesel fuel

At a celebration in Chicago earlier this year, DOE Secretary Hazel O'Leary inaugurated an OTT-led, multi-partner effort that will demonstrate a cost-effective method of turning waste cooking oil—currently an expensive disposal challenge—into clean, cost-competitive biodiesel fuel.

The effort brings together a diverse group of private and public sector partners in a full-scale demonstration project. Columbus Foods, a family-owned provider of cooking oils, is investing approximately \$500,000 to turn a building donated by the City of Chicago into a pilot facility that will convert oils reclaimed from its customers into biodiesel fuel, utilizing a process developed and advanced by an earlier collaboration between OTT, the National Biodiesel Board and the Fats and Protein Research Foundation. The fuel produced will be tested in buses run by the Chicago Transit Authority and American Sightseeing Tours Company, both of whom are sharing data and providing funding for the project.

O'Leary noted that in the short term, the effort is creating a number of new jobs in an economically disadvantaged area of Chicago. In the longer term, the effort could help spawn a brand new industry that will create thousands of jobs nationwide, replace billions of gallons of foreign oil annually, and significantly reduce polluting emissions from the nation's

heavy vehicle sector. Citing the prudent risks taken by the partners, O'Leary presented several with DOE's Energy Pioneer Award, honoring their "leadership in fostering creative ideas for developing biofuels and environmentally sound end uses."

O'Leary also noted the importance of creating successful partnerships between the private and public sectors, particularly in an era of diminishing governmental resources. Indeed, OTT considers this effort a prime example of how hard work and a modest Federal investment can steamroll into a major initiative as private sector partners with complementary goals team up for mutual success. Columbus Foods is developing an important value-added service; the City of Chicago is creating jobs and gaining access to a fuel that can help it meet local clean air goals; the trade associations are helping solve a long-term disposal challenge and helping create new markets and new innovations for their industries; and OTT is forwarding its charter to champion efforts that help America reduce its dependence on foreign oil and decrease transportation-based pollution.

If the demonstration project meets its goals, the partners could expand production to employ 120 Chicago residents, and become a significant source of biodiesel for

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A Report From: National Corn Growers Association

The Mission of the National Corn Growers Association (NCGA) is to “enhance corn profitability and usage to improve the quality of life in a changing world.” This goal encompasses a number of activities across a number of sectors, but one of the most exciting is the Association’s support of corn as a cleaner fuel source—one grown right here in the U.S.A.

Ethanol is currently the most widely used alternative fuel in the country. Retailers blend it at 10% concentrations in much of the gasoline Americans buy at the pump every day. Although “invisible” to the consumer and benign to gasoline engine parts, ethanol effortlessly provides a number of benefits for the environment and economy. It not only reduces tailpipe emissions but also instantly makes a 10% reduction in our dependence on foreign

oil. In addition, since most of the ethanol used today is produced from corn, its use bolsters America’s farm economy as well.

To help its members and the country as a whole take advantage of these benefits, the National Corn Growers Association has a number of enhancement programs and policies in place to help promote and expand the use of corn-based ethanol. In partnership with the Governors’ Ethanol Coalition in the National Ethanol Vehicle Coalition, NCGA has been instrumental in working with the Big Three automakers in efforts to mass produce vehicles capable of using 85% ethanol (E-85).

NCGA is also aggressively working to increase the availability of ethanol fueling stations, and is planning to add a total of 40 public stations in the Midwest in 1996. To stimulate the demand side, the organization is working with DOE and the Government Services Administration (GSA) to place E-85 vehicles in Federal fleets, and is also encouraging agribusinesses to purchase E-85 vehicles for their own fleets.

NCGA is a nonprofit organization representing nearly 30,000 corn farmers,

and it works closely with 25 state-affiliated corn grower associations. It is wholly committed to the widespread use of ethanol, even working in partnership with organizations representing other ethanol-producing commodities for the overall enhanced market development of the fuel.

For more information on the National Corn Growers Association, contact Director of Communications Michael Orso, NCGA, 1000 Executive Parkway #105, St. Louis, MO 63141-6397, (314) 275-9915, ext. 112.

“Association News” appears in each issue of *OTT Times*. The column is presented as a forum for the featured transportation-related trade association, and is written based on facts provided by them. OTT does not independently verify claims made by the association, and the column does not necessarily reflect the office’s beliefs or opinions. If you would like to find out more about how your association can be featured, please contact the Editor.

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over the past several years, has exceeded all expectations in its effort to produce higher ethanol yields from cellulosic material. We look forward to pursuing this technology in this and other partnerships with the private sector, and are proud of the industry it is beginning to spawn.

To all OTT customers/partners—the Customer Q&A feature is an opportunity for you to get the word out about your breakthrough efforts. Contact me at (202) 586-8014 to set up a brief phone interview and get your thoughts in a future issue of *OTT Times*.

Finally, a word about our first web-site edition. Last quarter, more than 130

readers called up <http://www.eren.doe.gov>, the site where the current issue of the *OTT Times* is posted in its complete form, easily downloadable using the free utility Adobe Acrobat. It’s simple—all you have to do is select **Transportation**, then select **OTT Times**. Reading the on-line version saves you time, saves us postage and printing costs and, potentially, saves a lot of trees. Check it out, and tell us what you think.

Until next time—

Ann Hegnauer

Richard Moorer forwards OTT goals inside and out

As Associate Deputy Assistant Secretary (ADAS), the “second in command” at OTT, Richard Moorer finds that his day-to-day activities can vary a great deal, from a very visible public role to a very strategic internal one.

“A big part of my job is that I’m the ‘fall-back guy,’” Richard jokes. “If Vice President Gore, Assistant Secretary Ervin or my boss, Deputy Assistant Secretary (DAS) Tom Gross, aren’t able to speak at an event, our stakeholders often get stuck with me.”

In actuality, Richard’s extensive alternative fuels expertise and easy-going style make him an effective spokesperson popular with groups ranging from students to the Big Three automakers.

“I enjoy getting the OTT message out to people, explaining what we’re all about, what we’re trying to do and, in general, making as much contact with the outside world as possible,” he said. “This allows us not only to keep customer-focused, but also to learn about complementary efforts going on out there, opening a dialog even if OTT supporting funds aren’t immediately available.”

Richard’s “field” experience in interacting with customers can be traced back to his first job at the EPA, in which

he visited groups of farmers to help them understand Federal pesticide regulations. As you might expect, these were lively, though not always friendly audiences. It was also here that he was introduced to the concept of alternative fuels.

“This was before the days of OTT, but farmers were very interested in the concept of producing their own fuel from sources they grew themselves,” he recalled. “I was intrigued, and this led me to work in a number of renewable alternative fuels areas, ultimately joining OTT in 1988.”

Richard brings his customer insights to bear in another major role—that of performing strategic planning, multi-year planning and budgeting for the entire OTT organization. One formal responsibility of the ADAS, Richard reports, is to act as “the strategic eyes and ears for the DAS,” which he fulfills by tracking the multitude of OTT programs, and meeting regularly with program participants. He believes that the new emphasis on planning and program, resulting from the Government Performance and Results Act and the President’s Reinvention Initiative, has

given program managers more opportunities than ever before to influence the continued funding for their own programs.

When he’s not working, Richard enjoys spending time with his wife and four children, especially pursuing outdoor activities such as rock climbing and canoeing. He also enjoys having an extended family—parents, siblings and in-laws—in the area. But, even so, he admits he doesn’t always leave his ADAS hat at the office.

“I enjoy what I do, and I find myself discussing our exciting projects in cocktail-party chatter and family conversations,” he said. “I guess I’m an OTT spokesperson after-hours as well.”

Customer Q&A

OTT Times talks with Bob Walker, President, SWAN Biomass Company

NOTE:

SWAN is a year-old joint venture company formed by Amoco and Stone & Webster, and is the current principal in a partnership that has evolved from a Cooperative Research and Development Agreement (CRADA) between Amoco and OTT to develop a process to convert cellulosic materials to ethanol.

Q. How did you first get involved with OTT?

A. “Amoco has explored alternatives to foreign oil since the late 1970s. Substantial expenditures have been made to investigate the use of biomass, oil shale, tar sands, and coal to manufacture transportation fuels. We recognized early that ethanol had the potential to become a major source of transportation fuel, but its cost had to be lowered for it to become competitive. By the late 1980s we saw that work sponsored by a predecessor of OTT in the U.S. Department of Energy had

hope of lowering the costs to the point where ethanol might be economically competitive. We therefore accelerated our own development work in areas where we thought we could make a contribution. In 1991 we began formally coordinating our own R&D with that sponsored by OTT through the formation of a Cooperative Research and Development Agreement (CRADA). In 1992 we began jointly funding genetic engineering and process R&D at Purdue University with OTT. That work produced a breakthrough in genetic engineering—an industrial yeast that could concurrently ferment both xylose and glucose. This accomplishment was very important to the economic success of the program.”

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Customer Q&A

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Q. What does this process entail?

A. “Basically, the process is a way to convert a wide variety of cellulosic materials—such as those found in agricultural processing and field wastes, and forest products and municipal wastes—into high-quality ethanol. A near-term application is the manufacture of ethanol from the residual starch, hemicellulose, and the cellulose that remains after corn is used to produce high-value products for human consumption. The advantage is not only greater yields, but also flexibility for the ethanol producer. With our technology the feedstock that are most cost-effective at the particular time can be used, and can readily be switched if prices change. And that flexibility means lower-cost ethanol.”

Q. What is the status of the OTT/SWAN partnership?

A. Recently, we completed two very successful six-week runs at the process development unit—a small scale production facility—at the National Renewable Energy Laboratory (NREL), producing ethanol from corn fiber. As expected with the first ramp-up of any new technology, there are some minor issues to address, but we expect to complete the research-dominated phase of the

CRADA finished before the end of the year. With this milestone, the CRADA will accelerate into the final demonstration phase. Industry will then have the benefits of our combined efforts available for commercial use. When this transfer takes place, one objective of OTT’s comprehensive fuels program will have been fulfilled.”

Q. What does the future hold?

A. “Once this technology is demonstrated at a commercial scale, there will be a tremendous demand for its use, both in the United States and elsewhere. Amoco formed the SWAN Company with Stone & Webster, so that their multi-project management skills could be used to enable rapid, widespread application of the technology. SWAN will begin offering process design packages this year to use for retrofits of existing ethanol facilities, or the building of new ones, in many cases providing producers with the ability to manufacture ethanol at a price of 60-80 cents per gallon with a 15% Return on Investment (ROI). We will also continue our R&D efforts to further refine the process and test additional feedstocks, likely using the NREL facility on a fee basis, as can any other company that is interested.”

Q. Was the OTT partnership valuable for SWAN?

A. “Amoco has invested literally tens of millions of dollars in ethanol programs. In retrospect, it’s been a prudent investment for us. Nonetheless, if OTT had not been there, we would have probably not gone forward—the effort would have been too large, involved too much risk, and required too many special skills for either partner in the CRADA to undertake alone. “It takes patient money to move new science to a point where it is viable commercially, and building on new science is often what is necessary when goals are set as high as those established by OTT. Since R&D in the private sector now seems to have a short-term focus, the government must take a longer term focus if the goals of society are to be met. The vision and tenacity of OTT has enabled the U.S. to develop viable alternative transportation fuel in time to meet the objectives set by Congress in the Energy Policy Act of 1992. We at SWAN, Amoco, and Stone & Webster take pride in being part of this effort, one that could improve the quality of life in America and the world.”

Used cooking oil to clean diesel fuel

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niche markets throughout the area. And, the effort could well become a harbinger of a new industry that will help America meet its energy, environmental and economic goals.

